IDENTIFICATION OF SUICIDAL RISK IN ADOLESCENTS

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The problem

The level of suicide risk in a school population was obtained to determine if there is a greater number than 12 per 100 population at the severe suicidal risk level as determined from a statistical report of the U.S. Department of Human Services.

Procedures

On an anonymous basis each adolescent in a random sample of 100 was rated as being of subclinical (normal), mild, moderate or severe suicidal risk as a result of an assessment obtained from answering 36 self-report statements from an instrument titled, Suicide Probability Scale (SPS). The level of risk for suicide was determined from the probability score of each adolescent.

Findings

No respondents were found to be classed in the high or severe level of suicidal risk. Three respondents rated in the mild classification of suicidal risk. Three respondents, included in the remaining ninty-seven respondents, were at the top of the subclinical level of risk for suicide with a classification value of 24. A total of ninty-seven respondents were rated in the subclinical or normal classification for suicidal risk.

Conclusion

While the analysis indicated no respondents to be classified at the severe level of suicidal risk, an important point to be made is that the Suicide Probability Scale was used in a general school population to identify students at risk of suicide.

Recommendation

It is recommended that the school be the center for and the initiator of a program of detection and intervention for the prevention of adolescent suicide. Educators must initiate a plan to bring together professionals from the community, medical and psychiatric fields and education to develop intervention programs that students will accept on a nonanonymous basis.

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CHAPTER 1

Introduction

The San Francisco Suicide Prevention center talked a fifteen-year-old boy out of jumping from the Golden Gate Bridge. He had been a troubled child since he was six and "gave out all kinds of clues." His father had thought, "He'll grow out of it" (Deni, 1983).

What are the means of preventing "cluster suicides" in a community after a student commits suicide. What can a school do, if anything, about suicide prevention? What do adolescents need to know in order to help prevent someone they know from ending their life (Steele, 1985)? These are some questions asked by William Steele a clinical supervisor of the Neighborhood Service Organization - Emergency Telephone Services/Suicide Prevention Center, Detroit, Michigan. These same questions are being asked by hundreds of interested groups, communities, schools, families and individuals throughout the United States.

Th

The purpose of this research is three-fold. The research problem is to identify levels of suicidal risk

in adolescents, as determined by the Suicide Probability Scale (SPS) self-report measure designed by doctors John G. Cull and Wayne S. Gill. To obtain this information is of major importance for the initiation of preventive measures to adolescent suicide. It is information not "after the fact", but at the earliest level of detection concerning adolescents at risk of suicide. It is a "preaction" that can be taken to detect problems prior to a suicide attempt by determining the level of suicidal risk in adolescents. Secondly, the data obtained through the use of the instrument can serve to focus attention, stimulate thought and help educate concerned individuals about what has been called the "last Taboo," suicide. Third, the results of this research may present a school and a community the opportunity to become more aware of the problem and offer another reason to take action, a preaction, in support of suicide prevention. The research results and the example of the use of a screening instrument could help fill a very basic need in a community, that of the identification of levels of suicidal risk in adolescents in a secondary school population.

Suicide Prevention

Since the founding of the American Association of Suicidology and the recent birth of a National

Commission for the Prevention of Youth Suicide, a growing number of communities are beginning to accept the idea of teaching suicide prevention in the schools as part of their health education programs. It is a shock to the members of a school system and a community when there is a student suicide or student suicides as there were in the Creek school district in Denver, Colorado, where four young people took their lives within an eighteen-month period (Hyde & Forsyth, 1986).

We Are the Gatekeepers

Experts have used the term, "gatekeepers" to identify individuals that can be detectors of clues to suicidal behavior. Students, teachers and parents are the eyes and ears to detect cries for help. This research may make their eyes and ears even more sensitive to the growing problem of adolescent suicide by introducing a preaction that can be taken.

The Instrument

The Suicide Probability Scale (SPS) is an instrument that is related to this problem and through research and tests is valid for its use in this research (see Appendix B). It is a tool to be used by the "gatekeepers." A major function of the SPS is to provide a global index for suicide risk and is intended for use with adolescent and adults, ages 14 years and older.

This research uses the SPS as a screening instrument to provide a quantitative, self-report measure of suicidal risk. It was hoped the data obtained would be used to open an area for clinical exploration. Clinical interviews by trained psychiatric professionals could be used to supplement, corroborate, and investigate the test results. This of course was not possible for this work since the self-report measures were completed by the adolescents on an anonymous basis.

CHAPTER 2

Review of the Literature

Since 1960 the suicide rate among young people fifteen to twenty four years of age has increased dramatically (Simons and Murphy, 1985). While the rate of the population as a whole went up from 10 to just 12 per 100,000, the rate per adolescent and young adults increased from 4 to 12 per 100,000 (U.S. Department of Health and Human Services, 1983) (Simons & Murphy, 1985). During the past two decades suicides have increased 250 percent among females age fifteen to twenty four and 300 percent among males in this age group (U.S. Census Bureau, 1983) (Simons & Murphy, 1985). In the 1960s young people accounted for approximately 5 percent of all suicides in the United States. In the 1980s they account for 20 percent of all the male suicides and 14 percent of all the female suicides.

Scope of the Problem

Simons and Murphy (1985) said, "These statistics do not reflect the full scope of the problem." As many as 25 percent to 50 percent of adolescent suicides may

be disguised or not reported for various reasons (Schurt, 1964; Selden, 1968). Some authors estimate that the relative proportion of suicide attempts to completed suicides among young people may be as high as 150:1 (Tischler and McHenry, 1982).

While Simons and Murphy's model investigated suicide ideation among a sample of 407 high school students, and several studies have examined the incidence of ideation in the general population (Paykel et al., 1974; Schwab, Warheit, & Holzer ,1972; Swanson, et al., 1971; Vandivort & Locke, 1979) the literature does not show a study that reports probability or the identification of suicidal risk among high school students.

The Prediction of Suicide

In a book edited by Aaron T. Beck, H. L. P. Resnik, and D. J. Lettieri titled, The Prediction of Suicide a statement is made to the effect that the responsibility for detecting and preventing suicide rests heavily on the mental health professional. The professional is charged with the duty of determining whether a person is suicidal and then expected to institute procedures to avert a suicide attempt.

A psychiatrist in particular has the weighty responsibility of separating the serious suicidal risk from the minimal risk cases (Beck, Resnik, & Lettieri,

1974). This responsibility has prompted the mental health professional and the psychiatrist to seek solid information on when to intervene in a given case and obtain data for making decisions that confront them concerning suicide potential. Professionals have encountered problems of obtaining solid information for making decisions as to when to intervene when confronted with suicide potential in an individual. The establishment of the use of the Suicide Probability Scale to survey the general school population would provide the solid information on which decisions could be made toward an intervention program.

A Starting Point

Literature shows there has been a long search for a group of scientific models that might be useful in explaining human behavior. If the question could be resolved regarding the place of suicide behavior in the entire spectrum of normal-abnormal behavior there would be a starting point from which to adhere and work. Cases could be collected and studied prior to the successful act of suicide, deviation from the norms in self-report measures of distress could be obtained. The Suicide Probability Scale used with the general population of school students could provide the starting point from which to work. However, up to this time progress is not much more than the establishment

of inventories such as the Beck Depression Inventory which is cited here because it has received so much acceptance in relation to other diagnostic indicators of suicide prediction.

The rise in adolescent deaths by suicide implies a breakdown in social controls which usually inhibit suicidal behavior (Berman & Cohen-Sandlers, 1983). There has been a rush to understand this phenomenon. There should be strategies utilized, in our initial attempts to find meaningful answers, using sound and accepted methodologies of research. Unfortunately there have been no strategies to do this up to this time (Berman & Cohen-Sandler, 1983).

Statistical Misinterpretations

Problems of Context

Gregory Zilboorg, over 40 years ago, was one of the early writers on the problem of adolescent suicide. He wrote: "It seems fair to say that statistics, wholly or partially derived from the pathogenesis and etiology of suicide, are more liable to lead to misconceptions than an understanding of the problem" (Zilboorg, 1937).

The weaknesses and problems continue to be acknowledged by modern writers (cf. Hollinger, 1979; Mishara, 1975). The research relies on suicide mortality and attempt statistics, particularly those applied to the young. The following example

illustrates the use of statistics to introduce, and bolster the significance of a researcher's topic. The example given here is one that is an absolute error not fact: "The highest suicide rate, formerly among the elderly, has shifted to the adolescent years," as stated by Den Houter in 1981. Today, as when Zilboorg wrote, suicide statistics are more likely to lead to misconceptions than understandings (Shneidman, 1980). One consideration is when U.S. death rates for the fifteen to twenty-four-year-old age groups are viewed not over just the past twenty years, but rather over the past seventy-five years (cf. Petzel & Cline, 1978). A rise is noticed in rates from 1900 to 1908 similar to that of today. The true fact is that the current incidence of suicidal deaths is only marginally different from that of 1908.

The base line year (1955) is often quoted when the rates are plotted for the entire country and this is the nadir of the graph. The effect of this is the suggestion that there is a three-fold increase over these twenty years when it may be merely a statistical artifact of a low base line year (Berman & Cohen-Sandler, 1983).

More Discrepancies and Misinterpretations

The literature continues to show discrepancies and misinterpretations when it comes to statements made

concerning suicide statistics viewed from a social and international context.

Suicide statistics ought not be viewed in isolation from other more general signs of social dysfunction (Berman & Cohen-Sandler, 1983). It should not be viewed as a phenomenon of unique clinical significance because the variety of indicators that are presented for showing an increase in suicidal death really appear to be more of the leading edge of a more general social dysfunction and perhaps the most sensitive of the measures.

International Context

The information in Vital Statistics of the United States, National Center for Health Statistics U.S. Department of Health and Human Services (1977) shows the high rate of adolescent suicide is not limited to the United States. The U.S. is surpassed by Switzerland, Austria, and the Federal Republic of Germany for fifteen to twenty-four-year-olds. An isolationist position can not be taken regarding adolescent suicide. It is a problem of international scope (Berman & Cohen-Sandler, 1983).

The Methodological Problems

Adolescent research is severely limited by the deaths (and consequently the unavailability) of its subjects. Suicidologists engaging in research are

aware of this difficulty; therefore the research has tended to focus on survivors of suicidal behavior. In fact, nearly all research reported on children and adolescent suicide in these past two decades has focused on the living suicidal subject; only two data-based studies have been reported on characteristics of completers. These are Sanborn, Sanborn, and Cimbolic (1974) and Shaffer (1974). Glaser (1971) and Toolan (1975) believe it is for these reasons that contradictory and confusing statements have appeared in the literature regarding the phenomenon of child and adolescent suicide.

Between 1960 and 1979, nearly forty empirical reports on adolescent and childhood suicide behavior appeared in the English language literature. The studies encompassed over five thousand children and adolescents described as "suicidal," ranging in age from three to twenty-one (Lourie, 1966). Only about a third focused primarily on children 14 and under (Berman & Cohen-Sandler, 1983).

The sheer volume of the literature and the number of the subjects surveyed should provide a meaningful basis on which to base conclusions in the quest to understand the phenomenon of youth suicide. There is considerable question as to the validity and reliability of the findings in the statistics. Glaring

methodological weakness in all but a few of the studies leave our understanding and prediction of these behaviors only slightly advanced from that of twenty years ago (Berman & Cohen-Sandler, 1983).

A Myth That Has Affected Research

The statement that the numbers of suicidal patients in hospital or clinical treatment situations equal the numbers of non-suicidal patients and non-patients is a myth that seems to have affected research. Research was done in 1967 that was thought to demonstrate inherent bias in sample selection in regard to suicidal adolescents. Much of the literature suggests that what has been learned about patients is generalizable to and therefore, descriptive of other patient (non-patient) populations. Garcia (1981) commented on the trend of ignoring control groups which "do not seem to be required if the experimental results conform to the prevailing Zeitgeist." "Without control groups or comparison groups conclusions of potential heuristic value must be tentative, at best" (Garcia, 1981).

Conclusions drawn indicate that without control groups or comparison groups conclusions of potential heuristic value must be tentative, at best.

The First Step

The first step in effective prevention and treatment of suicide behavior is the identification of those individuals likely to take their own lives and the prediction of immediate suicide risk (Anderson, 1981).

The identification of the individuals was the intention and the main thrust of this research. This step was not realized even at this late date since the screening could only be allowed on an anonymous basis.

Anderson continues in stating the ideal situation would be the identification of a unitary suicidal personality type. "This would lead to highly accurate predictions of suicide behavior", (Anderson et al., 1981)." It seems there have been research endeavors designed to demonstrate the existence of such a personality type but with little success to this date.

Predictive Statements

The past shows predictive statements concerning suicidal behavior were often based on demographic variables. More recently, results of concentrated research efforts have suggested a number of common features among suicidal individuals ranging from sociological and social events to specific clinical states (Anderson et al., 1981).

It is thought that careful clinical assessment and attention to various combinations of biographical and psychological factors may well improve predictive capabilities. These factors do need special attention because it is felt they often provide clear warning signs assisting in the early identification of individuals at high risk. The literature does not show a positiveness in this effort.

A Start in the 1950s

Until the mid-1950s there seemed to be little published information on the depression and despair which make young children choose to die. Since 1957, a plethora of papers have been produced that direct themselves to the study of adolescent teen-age youth, with a few written concerning children.

Articles have been written about schooling and self-alienation in trying to understand the alienating impact of contemporary social structures such as schooling on adolescents. Interpretations of some of the articles would seem to indicate that the schooling processes make it difficult for the student to develop a genuine sense of autonomous selfhood.

One result of the increase of information published in the mid-1950s concerning depression as an identifier of suicide behavior, prompted the creation of a depression inventory by Aaron T. Beck.

Beck Depression Inventory

It is depression on which Aaron T. Beck (Beck, 1967) eventually concentrated his work, but first came the development of the Suicide Intent Scales. The Suicide Intent Scale was designed to record data regarding the intensity of the attempter's wish to die at the time of the attempt. The research plan consisted of essentially a longitudinal study of six hundred suicidal patients. Scales had been developed for classifying suicidal behaviors before Beck's work on the Depression Inventory. This work was a result of the so-called Phoenix meeting. From this Arizona meeting in the city of Phoenix, came several inventories, indexes, measurement scales and predictors, all of which had one underlying goal in mind; to identify persons at risk of committing suicide.

Zung's Index

One such index was the result of the work of William W. K. Zung. Zung identified a major problem in suicide prevention and a critical need today in the area of suicide and crisis intervention as being a method useful to the worker in the identification of the person who is a serious suicidal risk. The identification of the suicidal person has been approached in the past by the use of various social and

demographic variables which have been found useful as predictors and by using a clinical approach, it has been recognized that the major emotional disorder which is the most important single prodromal syndrome for suicide is that of depression (Zung, 1986). At that time the interest was to design a scale for rating potential suicide risk that would include both the social and demographic variables, along with items that measure clinical entities such as depression. Zung saw the task at hand as one of making predictions about suicide potential and selecting the high risk person who will complete a suicide act. Zung said, "This early identification may lead to early intervention and possible prevention of suicide." The index that was constructed was the Index of Potential Suicide (IPS). To develop this scale various scales then available for assessing suicidal risk were reviewed. These included the ones published by Tuckman and Young (1968), Devries (1966), Farberow and Devries (1967).

IPS Results

Results of the social IPS scores showed the following:

1. There was no significant difference in mean scores among the four behavior groups tested (non-suicidal group; ruminators group suicide threateners and the attempters group)

2. Category scores for the demographic status, socioeconomic status, environmental stress and family history were not significantly different.
3. Past medical history was the only category with significantly different scores which could differentiate between patients with no suicide behavior and those with suicide behavior (ruminators, threateners, attempters).

Results of the clinical IPS scores showed specific items which appear to be useful in discriminating between the two extreme groups of no suicide behavior versus the suicide attempters on both self and interviewer rating forms. Those discriminating items are depression, anxiety, and emotional status categories.

Litman--Farberow--Wold and Brown's Conclusion

After much study these authors planned to describe the development and present status of a number of predictive scales of suicidal behavior. This was discussed in Beck et al. (1974, pp. 141-157). It is their conclusion that is of interest now and is related to this research. "We conclude that in order to identify high risk suicidal individuals, a two-stage screening process is required." What is needed first

is a "general screening" scale, which could be given to any group in the general population, for example, college freshman or members of a union. If the first screening instrument could pick out of the general population the upper two percent in lethality, this recognized potentially suicidal group would then be suitable subjects for a "clinical" scale. This second type of instrument would evaluate the degree of suicidal potential present and serve as a guide to treatment and prognosis (Beck et al., 1974).

The First Screening

This research is related to the effort of a first screening to identify students at risk of suicide.

Research Hypothesis

The research hypothesis is:

> The SPS scores will show a higher number of adolescents at high or severe suicidal risk than 0.12 per 100 population as estimated from the U.S. Department of Health and Human Services report of 1983 and the report from the Center for Information on Suicide, San Diego, California.

A report from the U.S. Department of Health and Human Services (1983) gives 12 committers or completers per 100,000 population for adolescents and young adults. In 1978 the Center for Information on Suicide

reported that for every committer there are a minimum of ten adolescents and young adults at high risk --possible attempters. This places 120.0 individuals at the high or severe level of risk per 100,000 population. The following proportion is used to make an estimate of 0.12 adolescents per 100 population at the high or severe suicidal risk level.

The equation is as follows: (1) 120.0 at severe risk is to 100,000 population as (X) at severe risk is to 100 population, (2) Therefore, (X) at severe risk = 120.0 * 100/100,000 population, (3) Finally, X = 0.12 at severe risk per 100 population.

CHAPTER 3

Design of the Study

Suicide--Still a Taboo Subject

The decision was made to proceed with the research with the respondents giving their answers on an anonymous basis since it was apparent sufficient educating had not been done to break the anonymous barrier. Consent for the screening was given by the parent or guardian.

In order to carry out the project, a letter of information was sent to the parent or guardian of the randomly selected student of the Spencer Community High School seeking the permission for their child to take part in the project (see Appendix A).

The Screening

The plan was to use an established instrument, the Suicide Probability Scale (SPS), to screen one hundred students for the purpose of determining the level of suicidal risk for each adolescent (see Appendix B). Confidentiality would be maintained and after the analysis of the data any findings of significance would be reported to the respondent. The opportunity to

obtain help would be a decision to be made by the adolescent and the parent. If the respondent desired, a second scale, a clinical scale would be employed by professional clinicians (a school psychologist or area psychiatrist) to interview the adolescent to interpret the findings more completely in order to determine an appropriate intervention strategy. Since the screening was, of necessity, anonymous, further steps could not be taken as described. A program of intervention was not in place in the school system where the screening was to be the means of identifying adolescents at risk of suicide. For this reason the screening could only proceed on the basis that the student remained anonymous.

Delimitations

The use of the SPS in this research was delimited to one hundred students in grades nine through twelve of the Spencer Community High School. This research was further delimited to exclude married students and also special education students on the basis of the chance for anxiety creation in the special education students and the possibility that the self-report items could not be comprehended by the special education students.

Parental consent was obtained. Confidentiality was maintained and the report was to be given on an

anonymous basis. The thirty-six self-report statements were administered in the library and the student center of the Spencer Community High School on May 17, 1988.

Sampling

Random sampling was used to eliminate possible bias. One hundred adolescents were randomly selected by a computer from 590 students of grades nine through twelve of the Spencer Community High School. This sampling provided a 95 percent confidence interval with a half-width of .0124. Thus we can be 95 percent confident that the estimated proportion of high or severe suicidal risk cases based on the sample will be within .0062 of the true proportion. This is based on an initial estimate of 120 suicide attempters per 100,000 or .0012, when the characteristic being measured is either very common or very rare as in this research.

Variables

The research variables were as follows:

1. The dependent variable was the Probability Score obtained from the randomly selected adolescent.

The Probability Score was determined from each respondent's individual total weighted score obtained from answers to thirty-six self-report measures. For each total weighted score, a choice was made from the

low presumptive risk level for this population. Probability Scores determined the classification of suicidal risk as corresponding to severe, moderate, mild or subclinical. The probability score of 0-24 identified a normal or subclinical range. The choice of weighted systems provided a method for deriving the Probability Scores. The low-risk area, to be used in the SPS scoring procedures, is intended for use with the general population and was applied to the random sample of Spencer Community Secondary School students.

2. The independent variables were as follows:

   a. Respondent's age
   b. Respondent's sex
   c. Ethnic background of the respondent
   d. Educational level
   e. Marital and socioeconomic status of the respondent

The independent variables of the respondents are factors which interact with the test score. The independent variables were evaluated to protect against test bias and to identify the interaction patterns for the SPS.

The SPS Instrument

Selection--Validity and Relationships

The SPS scores are relatively unaffected by the variables listed above. These findings were confirmed

by an analysis of covariance approach used to test their significance and effect size and a one-way analysis of variance that was conducted on the unadjusted means for the various levels of each variable.

The selection of indexes, measurement instruments and scales appear to be based on the belief that serious suicidal individuals all experience a generalized sense of isolation, hopelessness, anxiety, depression and suicide ideation, and that they will report feelings and behaviors related to these experiences. Furthermore there are responses which can be identified and have been identified through past research which successfully differentiated between lethal suicide attempters and others, including seriously disturbed psychiatric patients. These responses will be relevant for predicting future suicidal behavior (Cull & Gill, 1982).

The views of Shneidman (1966, 1974), Weisman (1971), and others who portray the act of suicide as impulsive, but the predisposition to commit suicide ("lethality") or engage in life-threatening behavior ("inimicality") as long-standing characterological, have been the basis of the development of the Suicide Probability Scale. Therefore the SPS can be viewed as an instrument useful in measuring both trait and state

dimensions of suicide risk: the characterological predisposition to harm oneself and fluctuations in this level of lethality as influenced by the individual's changing attitudes, environmental supports and stressors (Cull & Gill, 1982).

Standardization of the SPS

The background of research that supports this instrument and therefore influenced the choice of the SPS for this research is as follows: The SPS was standardized on a sample of 562 individuals (220 male and 342 female) who were selected at random from the general population of adolescents and adults in the San Antonio, Texas area (Cull & Gill, 1982). If the individuals had any psychiatric history or had made a suicide attempt they were excused from the sample. Cull felt the normative sample was quite diverse even though the individuals came from a restricted geographic area.

Finally Cull and Gill (1982) indicated that even though there were some limitations in the standardization process the test results showed a valid assessment of suicide risk could be made.

Psychometric Properties

The test results on psychometric properties was another factor influencing the choice of this instrument for this research and are as follows:

(1) an internal consistency of 0.85 to 0.93 (total scale), (2) a split-half reliability of 0.85 to 0.93 (total scale), (3) test-retest reliability of 0.92 ($p < 0.001$), indicating a high level of test-retest reliability, (4) a standard error of measurement of 2.99, (5) content validity, (6) factorial composition, (7) criterion-related validity, (8) the study of subscales through one-way analysis of variance and classification of accuracy, (9) two different strategies to investigate construct validity.

Other Relationships of Importance

Messick (1980) argues that evidence for response consistency, in the form of factor analytic studies, is evidence for the construct validity of measure. The SPS used a series of factor analysis to explore the consistency of item responses by subjects in a variety of settings. The settings were as follows:
(1) a large sample of 1158 subjects in 3 criterion groups (used in factor analysis to identify the subscale) was divided into odd and even-numbered subjects, (2) males and females were studied separately, (3) normal, psychiatric patients, and suicide attempters were studied separately.

Findings were of a highly consistent factor structure for the SPS items when examined across a variety of subsamples. The suicide ideation factor

appeared clearly even in samples of normal subjects only, which is of importance in the choice of the instrument in relation to this research.

Guttman Scalogram Analyses

The underlying dimensions of the structure of the SPS items described through the use of multidimensional scalogram and facet theory, Dancer (1982), in collaboration with Guttman (1950) and Lingoes (1977), for the scalogram analysis and facet theory (Levy & Guttman, 1981) provide an approach to the study of the seven hostility items in the SPS. Dancer (1982) showed two dimensions were "amount of hostility" and "direction of hostility" (toward self, toward others, toward things). With another random sample of 225 individuals, Dancer (1982) again showed the same two-dimensional structure for the hostility items and a clear separation of the normative and criterion group individuals in the two dimensional geometric space.

Relationship to the MMPI

Zachary, Reid, Cull, and Gill (1983) carried out a construct of validity test between the SPS subscales and total score and various scales from the Minnesota Multiphasic Probability Index (MMPI) for suicide prediction. The validity of the SPS scales were documented by correlations with the scales of the MMPI. The consistent negative correlations between a measure

of defensiveness and the various SPS measures suggest that a lack of candor in responding to the SPS would be an important factor to consider. Intentional falsification of responses did not appear to be a significant problem. In conclusion, while some respondents may distort their responses to conform with social expectations, this is generally not a serious threat to the validity of the scale (Cull & Gill, 1982).

Correlations between the standard clinical scales of the MMPI and the SPS subscales and the total score were also computed. In general the pattern of correlations is consistent with clinical descriptions of suicidal individuals and with previous research on use of the MMPI in suicide evaluation (Cull & Gill, 1982).

There was lack of significant correlation between SPS scales and the MMPI Masculinity-Femininity scale for men only. This was not considered serious for the use of the SPS for this research.

Berger Self-Acceptance Scale Relationship (BSAS)

Another study investigated the correlation between the SPS total score and a general measure of self-image/self-efficiency, using a group of 192 students that completed the SPS and the BSAS.

The BSAS is designed to measure an individual's reported self-image on a general positive-negative dimension. The result indicated a moderate but significant correlation between suicide and negative self-image ($r = .39$, $p < .001$). The findings were consistent with what would be expected given the nature of the scale: A person who has a more negative self-image is a higher risk for suicide than a person with a more positive self-image. The correlation is probably a low estimate of the relationship between these variables in a more heterogeneous population because this sample represents a restricted range of the SPS scores.

Locus of Control Relationships

Sex and educational level, stratified, provided the basis for another study. A random selection of 160 subjects provided the group. The SPS and the Rotter Internal-External Locus of Control was administered (Rotter, 1966). The SPS did not correlate significantly with either external or internal locus of control ($r = .06$ and $.00$, respectively). The findings provided additional evidence for discriminant validity of the SPS since it is unrelated to the more global construct, locus of control (Cull & Gill, 1982).

Effects of Moderator Variables

The moderator variables of the respondent's age, sex and ethnic background, martial and socioeconomic status were assessed. The total weighted scores and the associated probability of suicide risk needed to be interpreted differently as a function of the variables.

The above sociodemographic characteristics were tested by the analysis of covariance in testing the significance and effect of size and one-way analysis of variance was conducted on the unadjusted means for the various levels of each demographic variable. The difference of the means were all highly significant (Cull & Gill, 1982). Since these results are highly affected by the different distributions of the variables the results are not directly interpretable in the normative sample and two criterion groups. A more precise test between the demographic variables and the SPS total score was provided by inspecting the adjusted means (Cull & Gill, 1982). Marital status was the only one that proved significant. Recently separated couples scored higher on the SPS. This will not affect this research because of the delimitation to exclude married students from the sampling.

Sex Differences

Sex differences in attempted and completed suicides are well documented (Beck, Lester, & Kovacs,

1970; Lester, 1979; Wilson, 1981). Females scored slightly higher and had more variable scores on all of the subscales except hostility, but none of the differences was statistically significant (Cull & Gill, 1982). Based on a one-way analyses of variance there would seem to be no need to use separate norm tables for males and females tested in this proposed research.

Total SPS Model Tested

In a summary of the results of a hierarchical multiple regression analysis to test the model for predicting the SPS scores the dependent variable was the SPS total weighted score. The independent variables were the set of dummy-coded demographic variables (sex, age, ethnic background, educational level, and marital status), group membership (normals, psychiatric inpatients, or suicide attempters), and a set of two-way and higher order interactions was used to test the assumptions of equal covariate regression slopes. Cull and Gill (1982) argued this procedure provides a precise test of significance and effect size for the group with the covariate set of demographic variables partialled.

The results were computed separately for the even-numbered and odd-numbered cases, yielding very similar results. The findings are that the SPS scores were relatively unaffected by moderator variables such

as those listed above and there is no need for separate norms for any of these groups (Cull & Gill, 1982).

The SPS has been checked for two major categories of deviant responses called "faking good" and "faking bad" (Cull & Gill, 1982). Faking good is related to very high T-scores and faking bad is related to very low T-scores. In this research nothing of significance was detected from the data showing deviant responses.

Readability of the Measurement Statements

The SPS is limited by the respondent's ability to comprehend the written word. No problem was expected, concerning comprehension and none was encountered. Respondents were informed to ask the administrators for help if interpretation was needed.

Three different tools for assessing the reading difficulty of the SPS were used. The following three reading level tests produced generally similar results. The Fog Index (Gunning, 1952) yielded an estimated grade-equivalent level of 4.9; the Fry Graph (Fry, 1968) yielded an estimated reading level of fourth grade; and Flesch's (1948) index gave a readability score of 90.1 which is the level found in most comic books.

Assumptions for the Research

Two different strategies were used to investigate the construct validity of the SPS. The nature of the

constructs assessed by the scale and the stability of these constructs across different samples and testing situations were studied through a series of factor analysis and scalogram analyses (Cull & Gill, 1982). Also the relationship of the SPS to other personality measures was examined to evaluate concurrent and discriminant validity (Campbell & Fiske, 1959).

The above form the basis of the assumptions for this research given as follows:

1. The SPS is valid because of the measure of the association or correlation between the SPS probability scale and the criterion measure.
2. The instrument measures a suicide probability of risk.
3. The results can be interpreted to identify three levels of risk, mild, moderate, and severe probability of suicide risk.

Definition of Terms

A number of terms are essential for clarity in understanding the use of the SPS and are defined as follows:

(SPS) Suicide Probability Scale: A self-report measure composed of thirty-six statements, which are scaled by the choice of one of four answers (none or a little of the time, some of the time, a good part of

the time, most or all of the time). In each case a "T" is circled.

T-score: For this research the "T-score" is a number associated with the letter "T". The respondent circles the letter in the appropriate column relating to the suicide probability scale.

Normalized T-scores: T-scores (X = 50, SD = 10) used to directly compare the subscales regardless of the number of items on each subscale or the shape of the distribution of the raw scores.

Respondent: A student selected by a random procedure to answer the 36 self-report measures of the SPS.

Adolescent population: A population of students randomly selected for this research.

At risk: In this research "at risk" will define adolescents found to be of severe, moderate or mild potential for suicide, as determined by the Suicide Probability Scale.

Adolescent suicide: A cause of death for adolescents and youth rated as one of the three highest in the United States.

Suicide: A rather recent term meaning to take ones life.

Probability scores: An overall assessment of suicide risk reflected in three summary scores: A total

weighted score, a normalized T-score and a Suicide Probability Scale score.

Faking good: The tendency of a truly suicidal person to disguise this fact. This creates the likelihood of a false negative classification, that is, misclassification as nonsuicidal when they are actually significant suicide risks (Cull & Gill, 1982).

Faking bad: The tendency of a person to attempt to exaggerate his or her suicide potential. The tendency accentuates socially less desirable responses, individuals increase the likelihood of a false positive classification, that is, labeling clients as suicidal when actually they are not serious risks (Cull & Gill, 1982).

Low presumptive risk: A risk level used for the interpretation of data when the SPS is used as a screening instrument for the general population.

Subclinical classification: A classification of suicide risk based on SPS Probability Scores of 0-24, considered to show a normal classification from data analysis.

Severe classification: A classification of suicide risk based on SPS Probability Scores of 75-100, considered to show strong presumptive evidence for instituting extreme suicide precautions.

Moderate classification: A classification of suicide risk based on SPS Probability Scores of 50-74, considered to show serious suicide potential, though not extreme.

Mild classification: A classification of suicide risk based on SPS Probability Scores of 25-49, considered to show some suicide potential that should be followed with clinical interviews and an appropriate level of intervention.

Clinical subscales: SPS scales used to distinguish more precisely the pattern of cognitive and emotional factors which are expressed in an individual respondent. The scales are as follows: (1) Hopelessness; (2) Suicide Ideation; (3) Negative Self-Evaluation; (4) Hostility. The subscale of Hopelessness assesses the overall dissatisfaction and negative expectations about the future. Suicide Ideation is a subscale that identifies an individuals actions and thoughts associated with suicide. If the subjects appraisal is that things are not going well it is reflected in the subscale of Negative Self-Evaluation. The tendency for a person to throw things when angry or upset and elects isolation or impulsivity is reflected in the subscale of Hostility.

Limitations of the Research

The T-scores marked by the respondents are susceptible to conscious and unconscious variation. If the respondent is aware the SPS is an instrument used to determine the level of suicide risk, the knowledge may act as an uncontrolled variable. The first step, in this case, is to determine whether or not the respondent's answers are valid indicators of feelings and behaviors. This was done by observing critically very low T-scores and very high T-scores as directed by the SPS manual. Clinical judgment, careful analysis of the information concerning the respondent's item responses, and data from other sources including arranged clinical interviews and psychological testing would be necessary beyond the SPS manual instructions. Clinical judging was not done as part of the research since the reports were obtained anonymously.

CHAPTER 4

Analysis of the Data

A step-by-step procedure for interpretation of the data was followed as designed by the SPS. Since the self-report statements were answered on an anonymous basis it was not possible to determine how defensive or candid the respondent was in responding to personal questions.

Table 1 (see Appendix C) gives the raw score totals obtained from the thirty-six self-report statements for the four SPS clinical subscales built into the thirty-six self-report statements; hopelessness (A); suicide ideation (B); negative self-evaluation (C); and hostility (D). The raw scores for the clinical subscales are read, recorded and totaled on the Profile Form (W-172C) (see Appendix D). From the sum of the clinical subscale raw scores (A+B+C+D=TW) the Total Weighted Score (TW) is determined for each respondent. The T-Score (T) and the Probability Score (P) are determined from the T-Scores and Probability Scores Conversion Table A, found on pages 66 and 67 of the Suicide Probability

Scale (SPS) Manual (W-172B) (see Appendix E). Since the population of adolescents responding to the 36 self-report measures were classified in the general population as being of low presumptive risk the Probability Score is read from the "low" column under the Probability Score of Table A of Appendix E.

Assessed Risk

The assessed risk of suicide is based on SPS Probability Scores determined from Table 2 of the manual (see Appendix F). The assessed risk of suicide is read from the Probability Scores as follows:

1. A Probability Score of 75-100 assesses the risk as severe.

In this finding extreme suicide precautions should be taken as a level of intervention (Cull & Gill, 1982).

2. A score of 50-70 assesses the risk as moderate.

To be in the moderate assessed risk level indicates serious suicide potential, though not extreme (Cull & Gill, 1982).

3. A score of 25-49 assesses the risk as mild.

The mild assessment of suicide potential indicates some suicide potential, although there may be just generalized depression (Cull & Gill, 1982).

4. A score of 0-24 is assessed as normal or

subclinical, indicating only routine monitoring and supportive interventions (Cull & Gill, 1982).

The Results

The overall level of suicidal risk was evaluated. The T-score, corresponding to the total weighted score, was noted to determine if it was elevated two standard deviations or more above the mean (i.e., $\geq$ 70 of the T-score scale). Using the probability Score, the verbal descriptor which corresponds to the assessed level of suicide risk was determined, (i.e., "subclinical," "mild," "moderate, "severe").

The Hypothesis is Tested

The research hypothesis is:

> The SPS scores will show a higher number of adolescents at high or severe suicidal risk than 0.12 per 100 as estimated from the U.S. Department of Health and Human Services report of 1983 and the report from the Center for Information on Suicide, San Diego, California.

The analysis of the data indicated 0.00 per 100 adolescents at high or severe risk compared to the 0.12 per 100 population as estimated from the U.S. Department of Health and Human Services report of 1983 and the report from the Center for Information on Suicide, San Diego, California.

Two or more respondents identified as being in the severe suicide risk category would be required for rejecting the null hypothesis ($p = 0.0012$ or 0.12 percent) at the 0.01 level of significance. The null hypothesis is accepted.

Respondents (1) through (20) had T-scores which were 70 (the mean of the T-score scale) or above. A T-score of 70 or above is considered significant and provides strong presumptive evidence for instituting suicide precautions (Cull & Gill, 1982). Respondents (1) through (3) were classified by their Probability Scores as being in the "mild" suicide risk category, with Probability scores of 43, 29 and 25 respectively. Respondents (4, 5, and 6) had Probability Scores of 24 placing them in the top range of the subclinical assessed risk. Ninety-seven of the respondents were classed in the normal or subclinical assessment for risk; respondents (4) through (100).

SPS Subscales

Specific problem areas such as the variability among the subscales (i.e., "hopelessness," "suicide ideation," negative self-evaluation," "hostility") was noted to determine whether any subscale score was greater than or equal to 70. No respondents were found to have a subscale score of greater than or equal to

70, which would indicate a subscale area of clinical importance.

Of the thirty-six self-report statements there are critical item statements which indicate categories that are rarely endorsed by individuals that are not suicidal. Responses to these individual items were examined to collect qualitative information about the nature and seriousness of the suicidal risk. Two of the three respondents rated in the mild level of suicidal risk rated high in the subscale of suicide ideation with scores of 35 each. Also, for respondents (1) and (2) the subscales of hopelessness and hostility also rated high with scores of 31 and 34 for hopelessness and 25 and 21 for hostility. In one of the two cases the subscale of negative self-evaluation rated slightly lower, with a score of 17, than the subscales of hopelessness, suicide ideation, and hostility. Only observation comparisons were made concerning the subscales of the respondents. No conclusions were drawn based on the numerical scores since these scores were below the mean of 70.

CHAPTER 5

Summary--Conclusions--Discussion and Recommendations

Summary

The SPS manual was the guide for the purpose of administering the thiry-six self-report measures and scoring the rating forms to determine the level of suicidal risk for one hundred randomly selected adolescents from a high school population.

The raw scores were determined for the SPS subscales of hopelessness; suicide ideation; negative self-evaluation and hostility by determining the sum of the raw scores for each subscale. The raw scores from the subscales were totaled to determine the Total Weighted Score for each respondent. Table A (T-Scores and Probability Scores Conversion Table) found on page 66 and 67 of the SPS manual, and the appendix of this report, was consulted to determine the Suicide Probability Score for each respondent. Each respondent was assessed for level of risk of suicide by consulting Table 2 (Classification of Suicidal Risk Based on SPS Probability Scores).

The Probability Scores indicated only three respondents of the one hundred were found to be classified in an assessed risk category of mild. None of the respondents were assessed to be classified as severe suicidal risks as hypothesized.

Conclusions

The Clinical Scale. An intention of the screening with the SPS was to provide information for a second scale, a "clinical" scale, a scale used by professional clinicians to evaluate the degree of suicidal potential of the adolescent and then initiate an intervention program if necessary. Secondly, an intention was to educate, and stimulate thought toward the promotion of prevention through school curriculum change and the establishment of an intervention program developed cooperatively by community, school and psychiatric professionals.

The first intention was not realized because the respondents found classified in the mild category for suicidal risk were not identified. Attention was drawn to the educators in the school and to the parents in the community concerning the national problem of adolescent suicide. Educating was accomplished and thought was stimulated with attention directed to an action that was being taken in relation to the growing problem of adolescent suicide.

It would have been ideal to have had a suicide intervention program for adolescents in place. Then the introduction and use of the Suicide Probability Scale or other instruments that could provide the initial screening process could be utilized as a preaction in identifying adolescents at risk of suicide. Also, the findings of this research raises a question as to whether the results would be the same if the SPS were used at different times throughout the school year, such as at the end of the first quarter or at the end of the first semester rather than at the end of the school year as was the case in this project. The level of academic dropouts had been reached for the year and looking forward to the end of the school year lifted the spirits of the remaining students. What would the results have been if this screening had taken place earlier in the year and was given to the total secondary school population in a community?

It must also be concluded that the sample of adolescents screened is a valid sample for this school population. The findings show a lower number of adolescents at risk of suicide than the official estimate. Could this be because of the stability of this rural community or the result of the time of the screening? It might be concluded that no matter when the screening would take place in the school year the

results would basically be the same. If this is not the case then the question could be asked as to whether or not the official estimate is too high. No conclusions have been drawn on these questions.

To the best of my knowledge a project using this instrument has not been done in a secondary school system with the general school population. Therefore, much may have been accomplished in its initiation.

Discussion

The foundation for a program of intervention is possible and could be established to operate in a school, involving professional clinicians and the community. If this had been the case it might follow that the thirty-six self-report measures could have been answered nonanonymously. Assuming that this project will be carried out again, it follows that a program of intervention should be in place first, and this should be a future goal. Three students would have a chance to obtain help. At least these adolescents would be informed as to the availability, type, and degree of help available in the school and the community. Confidentiality would be maintained and, as is always the case, the adolescent and the family have the right to seek help or refuse it. The action taken to identify students at risk of suicide would at least be a preaction and not a postaction as

is the case in many instances after a suicide is attempted or completed.

It may be argued that other means exist to identify adolescents at risk, before an attempt is made. At that time the professionals trained to help in seeking solutions to the problems would be called upon to intervene. This must not be the case or the research would not show that among young people aged fourteen to twenty-four years, suicide is more common and is the third most frequent cause of death, ranking below only accidental death and homicide (Kuperman, Black, & Burns, 1988).

The literature indicates adolescents give warning signs and these warning signs indicate a need for attention but many times the "gatekeepers" miss the signs. At least on the lowest level of concern there should exist an instrument that could be employed for use with adolescents in the school age population for the identification of suicidal risk. For a new view, new work and a new direction, early intervention should be the future goal.

Recommendation

Team work--A multiple approach. It is apparent that preventing adolescent suicide requires a medical, psychological, social and "educational" approach to the problem.

The major use of the research data should center on an educational approach. Public education efforts hold great promise for prevention of adolescent suicide and should be continued and expanded. The classroom teacher is in a position to be one of the most valued "gatekeepers." Since school plays a major role in the lives of adolescents, the school offers a first avenue of approach to the prevention of adolescent suicide.

The research may provide a focal point from which information will be directed to teachers, administrators and parents concerning behavioral changes indicative of emotional distress to be used in the identification and referral processes. Curriculum for suicide prevention should be developed in all schools. Teachers of a school system would serve an educational function for the prevention of suicide through the curriculum. Educational discussion of suicide dispels myths and modifies the likelihood of an attempt (McHenry, Tishler, & Christman, 1980). Dialogue concerning suicide must be developed in all of our schools in order to do away with the "taboo" of suicide.

The research results will be a point from which to work for the prevention of adolescent suicide in a community. A preaction program, a first screening that can be completed before the attempt of suicide must be

developed to deal with the growing problem of adolescent suicide. The screenings should be administered periodically throughout the school year and must be understood to be a functioning part of the curriculum of the school system.

Research based on clinical patients and outpatients in addition to suicide attempters is good and is necessary. However, it is based on action after the fact (postaction). Mental health professionals enter and treat the family and, as national news has indicated, the total community for shock. It is their difficult task to help the family and the community through the levels of grief after a suicide has been completed.

The Team

The final recommendation is to devise a plan that will allow a first screening to take place on a nonanonymous basis. The screening should be introduced and initiated in the school system as a major part of the curriculum and must be commonly accepted and carried out periodically in the process of counseling the student body relating to an on-going program that involves the mental and physical well-being of the individual. It is recommended that a team of professionals from the school, community, and medical and psychiatric professions be formed to establish a

"preaction" intervention program. The schoolhouse of the community should be the meeting place for the intervention program planners. The intervention planners must establish the foundation for total community education related to the problem of adolescent suicide. The team must bring together all of the research knowledge related to the problem. From the team must come the direction for the intervention plan and the final plan itself. The plan must involve the cooperative effort of the school officials and staff, the community and the medical and psychiatric professionals. The plan must secure the confidence of the students with confidentiality maintained. A preaction must be the goal.

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APPENDIXES

APPENDIX A

Form Letter

The following form letter was sent to the parents or guardian to obtain permission for the child to take part in the project.

Office of the
Principal

Spencer Community Schools

SPENCER, IOWA 51301

April 18, 1988

Dear Parent:

The purpose of this letter is to inform you about a research project, on adolescent suicide, that Spencer High School, in conjunction with Drake University, would like to complete with your help and the help of your son/daughter.

The project calls for the random selection of 100 high school students, to answer 36 questions concerning levels of risk related to adolescent suicide, this should take about ten to fifteen minutes. Your student has been one of those randomly selected and we need your permission for your son/daughter to be involved in this project. If you agree to allow us to use your student in this project you can be assured that your student will not be identified, only the answers to the questions will be used in the research The results of this research will add to the current knowledge about adolescent suicide and hopefully will lead to the development of intervention strategies and solutions to this growing problem.

If you have any questions, please call 262-1700. The attached consent form should be signed and dated and sent to the Principal's office in the enclosed self-addressed envelope.

Thank you for your cooperation in this worthwhile research project.

Sincerely,

William Mullenberg
Principal

I give my son/daughter _____permission
(Name)
to take part in the research project dealing with levels of risk related to adolescent suicide

_____
Signature of Parent or Guardian

_____Date

APPENDIX B

SPS Rating Form W-172A

SPS Rating Form W-172A is composed of two sections for the marking of the 36 self-report measures. The front copy has a carbon back-side. When the raw T-Scores are marked on the front, the respective raw T-Score numbers are recorded on the front of the second sheet. From these scores the raw scores are totaled for each of the four clinical subscales. Totaling the raw T-Scores gives the Total Weighted Score.

SPS

Rating Form

John G. Cull, Ph.D. and Wayne S. Gill, Ph.D.

Published by
wps WESTERN PSYCHOLOGICAL SERVICES
Publishers and Distributors
12031 Wilshire Boulevard
Los Angeles, California 90025

Name: _____ Sex: M F Age: _____ Marital Status: _____

Education: _____ Race: _____ Usual Occupation: _____ Today's Date: _____

Have you had any major upsets or stresses in the last two years? ☐ Yes ☐ No. If yes, what were they and about how long ago did they occur?

_____

_____

DIRECTIONS

Listed below are a series of statements that some people might use to describe their feelings and behaviors. Please read each statement and determine how often the statement is true for you. Then circle the letter T in the appropriate box to indicate how often you feel the statement applies to you.

Be sure to rate every item. When you are through, return the completed rating form to the person who gave it to you.

Example:

	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
1. I feel anxious.	T	(T)	T	T

	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
1. When I get mad I throw things.	T	T	T	T
2. I feel many people care for me deeply.	T	T	T	T
3. I feel I tend to be impulsive.	T	T	T	T
4. I think of things too bad to share with others.	T	T	T	T
5. I think I have too much responsibility.	T	T	T	T
6. I feel there is much I can do which is worthwhile.	T	T	T	T
7. In order to punish others I think of suicide.	T	T	T	T
8. I feel hostile toward others.	T	T	T	T
9. I feel isolated from people.	T	T	T	T
10. I feel people appreciate the real me.	T	T	T	T
11. I feel many people will be sorry if I die.	T	T	T	T
12. I feel so lonely I cannot stand it.	T	T	T	T
13. Others feel hostile toward me.	T	T	T	T
14. I feel, if I could start over, I would make many changes in my life.	T	T	T	T
15. I feel I am not able to do many things well.	T	T	T	T
16. I have trouble finding and keeping a job I like.	T	T	T	T
17. I think that no one will miss me when I am gone.	T	T	T	T
18. Things seem to go well for me.	T	T	T	T
19. I feel people expect too much of me.	T	T	T	T
20. I feel I need to punish myself for things I have done and thought.	T	T	T	T
21. I feel the world is not worth continuing to live in.	T	T	T	T
22. I plan for the future very carefully.	T	T	T	T
23. I feel I don't have many friends I can count on.	T	T	T	T
24. I feel people would be better off if I were dead.	T	T	T	T
25. I feel it would be less painful to die than to keep living the way things are.	T	T	T	T
26. I feel/felt close to my mother.	T	T	T	T
27. I feel/felt close to my mate.	T	T	T	T
28. I feel hopeless that things will get better.	T	T	T	T
29. I feel people do not approve of me or what I do.	T	T	T	T
30. I have thought of how to do myself in.	T	T	T	T
31. I worry about money.	T	T	T	T
32. I think of suicide.	T	T	T	T
33. I feel tired and listless.	T	T	T	T
34. When I get mad I break things.	T	T	T	T
35. I feel/felt close to my father.	T	T	T	T
36. I feel I can't be happy no matter where I am.	T	T	T	T

W 172A

Suicide Probability Scale (SPS)

Rating Form

John G. Cull, Ph.D. and Wayne S. Gill, Ph.D.

Published by
WPS WESTERN PSYCHOLOGICAL SERVICES
Publishers and Distributors
12031 Wilshire Boulevard
Los Angeles, California 90025

Total Weighted Score _____
T-Score _____
Probability Score _____
Suicide Risk:
Mild Moderate Severe

Name: _____ Sex: M F Age: _____ Marital Status: _____

Education: _____ Race: _____ Usual Occupation: _____ Today's Date: _____

Have you had any major upsets or stresses in the last two years? ☐ Yes ☐ No. If yes, what were they and about how long ago did they occur?

_____

_____

Life Events

☐ Psychosocial Stressors (DSM-III, Axis IV) (most recent listed first):

	Nature	Date	Severity*
1.			
2.			
3.			

☐ Previous History of Suicide Attempts

	Method	Date	Seriousness
1.			
2.			
3.			

*1 = minimal, 2 = mild, 3 = moderate, 4 = severe, 5 = extreme, 6 = catastrophic.

Indicators for Major Depressive Episode (DSM-III)

☐ Dysphoric Mood

☐ Other Clinical Indicators (at least four consistently present during last 2 weeks)

- ○ Disturbed appetite
- ○ Sleep disturbance
- ○ Psychomotor agitation/ retardation
- ○ Loss of interest/ pleasure
- ○ Loss of energy, fatigue
- ○ Feelings of worthlessness
- ○ Diminished ability to think
- ○ Recurrent thoughts of suicide

	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
1. When I get mad I throw things.	1	3	3	4
2. I feel many people care for me deeply.	4	2	1	1
3. I feel I tend to be impulsive.	1	1	2	3
4. I think of things too bad to share with others.	1	2	2	5
5. I think I have too much responsibility.	1	1	2	4
6. I feel there is much I can do which is worthwhile.	3	3	1	1
7. In order to punish others I think of suicide.	1	4	5	5
8. I feel hostile toward others.	1	2	3	5
9. I feel isolated from people.	1	2	4	5
10. I feel people appreciate the real me.	3	2	0	2
11. I feel many people will be sorry if I die.	2	2	1	2
12. I feel so lonely I cannot stand it.	0	3	3	5
13. Others feel hostile toward me.	1	2	4	5
14. I feel, if I could start over, I would make many changes in my life.	0	1	2	4
15. I feel I am not able to do many things well.	1	2	3	4
16. I have trouble finding and keeping a job I like.	1	3	4	5
17. I think that no one will miss me when I am gone.	1	2	3	4
18. Things seem to go well for me.	4	3	0	1
19. I feel people expect too much of me.	1	1	2	4
20. I feel I need to punish myself for things I have done and thought.	1	2	4	4
21. I feel the world is not worth continuing to live in.	1	3	4	5
22. I plan for the future very carefully.	3	2	1	2
23. I feel I don't have many friends I can count on.	1	2	3	4
24. I feel people would be better off if I were dead.	1	4	5	5
25. I feel it would be less painful to die than to keep living the way things are.	1	3	4	5
26. I feel/felt close to my mother.	3	2	1	1
27. I feel/felt close to my mate.	3	2	1	1
28. I feel hopeless that things will get better.	0	2	3	4
29. I feel people do not approve of me or what I do.	1	2	3	4
30. I have thought of how to do myself in.	1	3	4	5
31. I worry about money.	1	1	2	3
32. I think of suicide.	1	3	5	5
33. I feel tired and listless.	1	1	3	5
34. When I get mad I break things.	1	2	4	5
35. I feel/felt close to my father.	2	2	1	1
36. I feel I can't be happy no matter where I am.	0	3	4	4

W-172A

APPENDIX C

Research Data

This table gives the SPS Clinical Subscale Raw Scores; Total Weighted Scores; the T-scores and the Suicide Probability Scores for the 100 respondents as determined from the T-scores marked on the form W-172A (see Appendix B) and totaled from the numbers on the carbon section of the form W-172A (see Appendix A). The SPS clinical subscale scores are presented as follows: (A) hopelessness; (B) suicide ideation; (C) negative self-evaluation; (D) hostility. The Total Weighted Score (TW) is determined for each respondent by the formula [A+B+C+D=TW].

Table 1

SPS Clinical Subscale Raw Scores (A, B, C, D);
Total Weighted Scores (TW);
T-Scores (T) and Suicide Probability Scores (P) for
100 Respondents

Respondent	(A)	(B)	(C)	(D)	(TW)	(T)	(P)
1.	31	35	21	25	112	80	43
2.	34	35	17	21	107	77	29
3.	35	26	21	17	99	76	25
4.	27	23	19	25	94	74	24
5.	25	31	22	19	97	75	24
6.	25	28	22	19	94	74	24
7.	26	30	19	17	92	74	23
8.	28	25	26	14	93	74	23
9.	29	24	23	12	88	73	22
10.	27	24	19	16	86	73	21
11.	21	28	21	16	86	73	21
12.	24	23	21	16	84	72	20
13.	25	19	21	18	83	72	19
14.	28	27	11	16	82	71	19
15.	27	24	20	11	82	71	19
16.	24	24	20	13	81	71	18
17.	28	21	16	15	80	71	17

(Table 1 continued)

18.	17	24	21	16	78	70	15
19.	23	22	16	17	78	70	15
20.	31	20	16	11	78	70	15
21.	28	11	21	15	75	69	14
22.	28	17	13	16	74	68	14
23.	22	20	18	13	73	68	14
24.	26	16	17	13	72	68	13
25.	30	15	12	14	71	68	12
26.	25	22	13	10	70	67	11
27.	23	23	11	13	70	67	11
28.	26	10	18	15	69	66	10
29.	17	24	20	07	68	66	10
30.	19	18	19	11	67	66	10
31.	21	18	12	15	66	66	10
32.	17	17	19	11	66	66	10
33.	23	13	18	08	62	65	08
34.	20	15	15	10	60	64	08
35.	22	17	12	09	60	64	08
36.	18	17	13	11	59	63	07
37.	21	10	17	11	59	63	07
38.	15	21	13	09	58	63	07
39.	15	11	21	10	57	63	06
40.	21	08	19	08	56	62	06
41.	17	13	13	13	56	62	06

(Table 1 continued)

42.	23	12	08	12	55	62	05
43.	19	10	12	14	55	62	05
44.	17	11	14	13	55	62	05
45.	21	10	12	11	54	61	05
46.	15	08	19	11	53	60	05
47.	18	11	13	11	53	60	05
48.	13	13	17	10	53	60	05
49.	21	09	09	13	52	60	04
50.	16	12	14	10	52	60	04
51.	15	08	16	13	52	60	04
52.	20	09	15	07	51	59	04
53.	17	10	13	10	50	58	04
54.	15	11	09	15	50	58	04
55.	18	11	10	10	49	57	03
56.	14	10	11	14	49	57	03
57.	14	10	13	11	48	56	03
58.	14	08	14	11	47	55	03
59.	19	08	10	10	47	55	03
60.	19	10	10	08	47	55	03
61.	15	09	12	10	46	54	02
62.	16	09	10	11	46	54	02
63.	17	09	11	09	46	54	02
64.	13	09	09	13	44	52	02
65.	12	14	09	09	44	52	02

(Table 1 continued)

66.	10	10	13	11	44	52	02
67.	14	08	13	08	43	51	02
68.	16	09	09	09	43	51	02
69.	11	08	13	11	43	51	02
70.	14	09	12	07	42	51	02
71.	13	09	13	07	42	51	02
72.	12	12	10	08	42	51	02
73.	12	08	12	09	41	49	02
74.	14	08	09	10	41	49	02
75.	13	08	13	07	41	49	02
76.	15	08	11	07	41	49	02
77.	13	12	08	08	41	49	02
78.	11	10	11	08	40	49	02
79.	12	09	12	07	40	49	02
80.	12	08	10	10	40	49	02
81.	12	08	10	10	40	49	02
82.	14	08	10	08	40	49	02
83.	12	08	11	09	40	49	02
84.	11	09	11	08	39	47	02
85.	11	08	09	11	39	47	02
86.	11	09	11	08	39	47	02
87.	08	13	09	08	38	46	02
88.	09	08	12	09	38	46	01
89.	10	08	11	09	38	46	01

(Table 1 continued)

90.	11	09	08	09	37	44	01
91.	15	08	07	07	37	44	01
92.	09	08	11	09	37	44	01
93.	10	08	12	07	37	44	01
94.	09	08	09	11	37	44	01
95.	11	09	09	07	36	42	01
96.	09	08	10	08	35	40	01
97.	09	08	11	07	35	40	01
98.	08	08	12	07	35	40	01
99.	08	08	12	07	35	40	01
100.	08	08	11	07	34		

APPENDIX D

Profile Form W-172C

SPS Profile Form W-172C is used to record and graph the raw scores for the four clinical subscales and plot the Total Weighted Score (sum of all subscale scores).

Suicide Probability Scale (SPS)

Profile Form

John G. Cull, Ph.D. and Wayne S. Gill, Ph.D.

Published by

WPS WESTERN PSYCHOLOGICAL SERVICES
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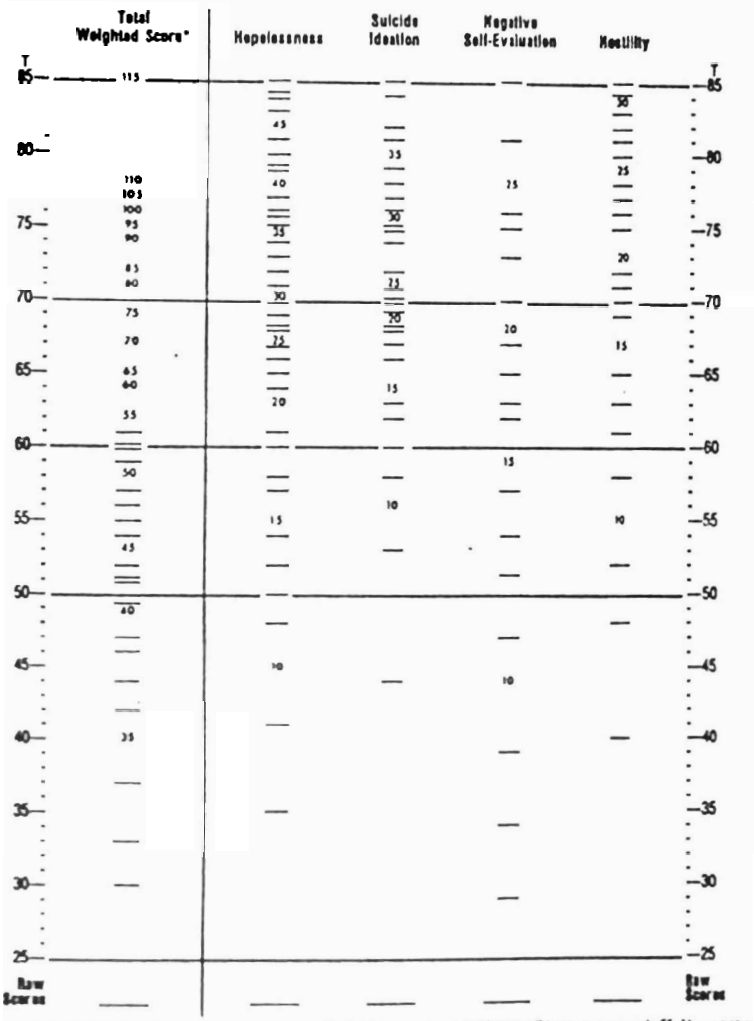
12031 Wilshire Boulevard
Los Angeles, California 90025

Name: _____ Sex: M F Age: _____ Marital Status: _____

Education: _____ Race: _____ Usual Occupation: _____ Date: _____



* For the total weighted score, numbers and hash marks are presented for possible raw scores up to 55. Above a raw score of 55, only numerical values for every five raw scores are listed.

RAW SCORES

Hopelessness
Item 5 ___
Item 12 ___
Item 14 ___
Item 15 ___
Item 17 ___
Item 19 ___
Item 23 ___
Item 28 ___
Item 29 ___
Item 31 ___
Item 33 ___
Item 36 ___
Total ___

Suicide Ideation
Item 4 ___
Item 7 ___
Item 20 ___
Item 21 ___
Item 24 ___
Item 25 ___
Item 30 ___
Item 32 ___
Total ___

Negative Self-Evaluation
Item 2 ___
Item 6 ___
Item 10 ___
Item 11 ___
Item 18 ___
Item 22 ___
Item 26 ___
Item 27 ___
Item 35 ___
Total ___

Hostility
Item 1 ___
Item 3 ___
Item 8 ___
Item 9 ___
Item 13 ___
Item 16 ___
Item 34 ___
Total ___

Total Weighted Score
(Sum of all subscale scores)
___

W-172C

APPENDIX E

T-Scores and Probability Score Conversion Table

Table A (T-Scores and Probability Score Conversion Table) is used to determine a normalized T-Score[a] and the Probability Score[b] from the presumptive risk level for a population. The "low" presumptive risk level (general population) was used for this research.

APPENDIX

Table A

T-Scores and Probability Scores Conversion Table

Total Weighted Score	*T*-Score[a]	Probability Score[b] High	Intermediate	Low
132+	86	99	99	99
131	85	99	99	98
130	85	99	99	96
129	85	99	99	95
128	85	99	99	92
127	85	99	99	89
126	85	99	99	84
125	85	99	99	78
124	85	99	99	72
123	85	99	99	66
122	85	99	99	62
121	85	99	98	59
120	85	99	98	58
119	85	99	98	56
118	85	99	98	55
117	85	98	97	54
116	85	98	97	52
115	85	98	97	51
114	85	98	96	49
113	82	97	96	48
112	80	97	95	43
111	79	97	95	34
110	78	96	94	31
109	78	96	93	30
108	77	95	92	29
107	77	95	91	29
106	77	94	90	28
105	77	94	89	28
104	76	93	88	28
103	76	93	87	27
102	76	92	86	27
101	76	91	85	26
100	76	90	83	26
99	76	90	82	25
98	75	89	80	25
97	75	88	78	24
96	75	87	77	24
95	75	85	75	24
94	74	84	73	24
93	74	83	71	23

Table A (Continued)

T-Scores and Probability Scores Conversion Table

Total Weighted Score	*T*-Score	Probability Score High	Intermediate	Low
92	74	82	69	23
91	74	80	67	22
90	74	79	65	22
89	73	78	62	22
88	73	76	60	22
87	73	74	58	21
86	73	72	56	21
85	72	71	53	20
84	72	69	50	20
83	72	67	48	19
82	71	65	46	19
81	71	64	44	18
80	71	61	42	17
79	70	59	40	16
78	70	58	39	15
77	69	57	38	15
76	69	56	37	15
75	69	55	35	14
74	68	54	34	14
73	68	53	33	14
72	68	52	32	13
71	68	50	31	12
70	67	48	30	11
69	66	47	29	10
68	66	46	28	10
67	66	45	27	10
66	66	44	27	10
65	65	43	26	10
64	65	42	25	9
63	65	41	24	9
62	65	40	24	8
61	64	39	23	8
60	64	38	22	8
59	63	37	21	7
58	63	35	20	7
57	63	34	19	6
56	62	33	19	6
55	62	32	18	5
54	61	31	17	5
53	60	30	17	5

[a] Normalized *T*-scores with $\bar{X} = 50$, $SD = 10$

[b] Probability Scores are determined separately for three levels of presumptive risk (high, intermediate, and low)

table continued on next page . . .

Table A (Continued)
T-Scores and Probability Scores Conversion Table

Total Weighted Score	*T*-Score	Probability Score		
		High	Intermediate	Low
52	60	30	16	4
51	59	29	16	4
50	58	28	15	4
49	57	28	15	3
48	56	27	14	3
47	55	26	14	3
46	54	25	13	2
45	53	25	13	2
44	52	24	13	2
43	51	23	12	2
42	51	22	12	2
41	49	22	11	2
40	49	22	11	2
39	47	21	11	2
38	46	21	11	1
37	44	21	10	1
36	42	21	10	1
35	40	20	10	1
34	37	20	10	1
33	33	20	10	1
32	30	20	10	1
31	23	20	10	1
30	18	20	10	1

APPENDIX F

Classification of Suicide Risk Based on the SPS Probability Score

Table 2 (Classification of Suicide Risk Based on SPS Probability Score) is used to determine the Assessed Risk for each respondent. This table also gives a level of intervention for each assessed risk classification.

Table 1

Classification of Suicide Risk Based on SPS Probability Scores

Probability Score	Assessed Risk	Level of Intervention[a]
75-100	Severe	Extreme suicide precautions; immediate hospitalization and one-on-one monitoring at all times. Psychotropic medications likely.
50-74	Moderate	Serious suicide potential, though not extreme. General suicide precautions, either hospitalization for further observation or maintenance on an outpatient basis with increased availability and environmental supports. Psychotropic medications likely.
25-49	Mild	Some suicide potential, although may just be generalized depression without specific suicide ideation. Use clinical interviews to determine appropriate level of intervention. Possible interventions include maintenance in outpatient psychotherapy, increased availability, and working with significant others to help them identify clinical signs of increased suicide risk. Psychotropic medications possible though not likely.
0-24	Subclinical	Normal or subclinical range of assessed suicide risk; routine monitoring and supportive interventions. Reassess if clinical indicators suggest an invalid pattern of responses of if the level of presumed risk changes over time.

[a]The interventions are intended to illustrate the types of interventions that might be appropriate given a particular Probability Score. In actual practice, appropriate treatment planning is a highly individual matter and should not rely on a fixed formula or "cookbook" approach.

APPENDIX G

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